



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.      | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|---------------------|------------------|
| 09/955,043           | 09/19/2001  | Satoshi Kaiho        | 016907/1292         | 8502             |
| 22428                | 7590        | 07/12/2005           |                     |                  |
| FOLEY AND LARDNER    |             |                      |                     | EXAMINER         |
| SUITE 500            |             |                      |                     | PHAM, HAI CHI    |
| 3000 K STREET NW     |             |                      |                     | ART UNIT         |
| WASHINGTON, DC 20007 |             |                      |                     | PAPER NUMBER     |
|                      |             |                      |                     | 2861             |

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                         |                  |  |
|------------------------------|-------------------------|------------------|--|
| <b>Office Action Summary</b> | Application No.         | Applicant(s)     |  |
|                              | 09/955,043              | KAIHO, SATOSHI   |  |
|                              | Examiner<br>Hai C. Pham | Art Unit<br>2861 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-6 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 December 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/19/01.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Objections*

2. The following claims are objected to because of the following informalities:

#### Claim 1:

- Line 2, "which emit" should read --which emits--,
- Line 4, "which deflect" should read --which deflects--,
- Line 6, "scanning" (second occurrence) should read --scans--,
- Line 7, "the exposure light" should read --the deflected laser beam-- to clarify that the light for exposure of the image carrier comes from the deflected laser beam,
- Line 10, "which conduct" should read --which conducts--,
- Line 14, "a narrower linear exposure light spot" is not clear since the relative term "narrower" is not linked to any comparative reference. A suggested correction is as follows --a narrower linear exposure light spot illuminated on the image carrier by the laser beam conducted through the optical member along the main scanning direction--,
- Line 17, "the exposure light spot" should read --the linear exposure light spot--.

#### Claim 4:

Art Unit: 2861

- Line 4, "which scan" should read --which scans--,
- Line 4, "the exposure light" should read --an exposure light--,
- Line 7, "which supply" should read --which supplies--,
- Line 9, "which transfer" should read --which transfers--,
- Line 11, "which fix" should read --which fixes--,
- Line 14, "which emit" should read --which emits--,
- Line 16, "which deflect" should read --which deflects--,
- Line 18, "scanning" (second occurrence) should read --scans--,
- Line 21, "which conduct" should read --which conducts--,
- Line 25, "a *narrower* linear exposure light spot" is not clear since the relative term "narrower" is not linked to any comparative reference. A suggested correction is as follows --a *narrower* linear exposure light spot illuminated on the image carrier by the laser beam conducted through the optical member along the main scanning direction--,
- Line 28, "the exposure light spot" should read --the linear exposure light spot--.
- Line 30, "ration" should read --rotation--.

Claim 5:

- Line 3, "which hold" should read --which holds--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1:

- The following limitation “the *tilt* of the exposure light spot *relative* to the image carrier” at line 17 appears to be ambiguous in that it is not known whether the above claimed “tilt” is defined with respect to the *surface* of the image carrier or the main scanning direction perpendicular to *motion direction* of the image carrier. Such detail is critical to the determination of the axis of rotation of the optical housing.

Claim 4:

- The following limitation “the *tilt* of the exposure light spot *relative* to the image carrier” at line 28 appears to be ambiguous in that it is not known whether the claimed “tilt” is being defined with respect to the *surface* of the image carrier or to the main scanning direction perpendicular to *motion direction* of the image carrier. Such detail is critical to the determination of the axis of rotation of the optical housing.

Claims 2-3 and 5-6 are dependent from claims 1 and 4 above, and are therefore indefinite.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Compton et al. (U.S. 4,265,524).

Compton et al. discloses an optical scanner comprising a light emitting section (laser light source 30), which emits a laser beam based on an image signal, a deflecting/scanning section (rotating multi-faceted line-scanning prism reflector or polygon mirror 44), which deflects the laser beam emitted from the light emitting section toward a main scanning direction and scans, with the deflected laser beam, an image carrier (film 10) moved in a sub-scanning direction to form a latent image on the image carrier, an optical member (scanning lens 42), which conducts the laser beam deflected by the deflecting/scanning section to the image carrier, and a rotation shaft (e.g., shaft of the rotatable support 26) located on an axis (imaginary axis 25 normal to the surface of the film) passing through a linear exposure light spot illuminated on the image carrier by the laser beam conducted through the optical member along the main scanning direction, wherein the tilt of the linear exposure light spot relative to the image carrier is corrected by rotating the device about the rotation shaft (the angular displacement of the scan line on the film with respect to a reference scan line perpendicular to the

direction of the motion of the film is corrected by rotating the support 26 and thus the line scanner unit 24 around the axis 25 passing through the scan line).

Compton et al. further teaches:

- a housing wherein the light emitting section, deflecting/scanning section and optical member are held in a mutually positioned relation and the rotation shaft is provided on the housing (the light scanner unit 24 including a light-tight box holding the laser source 30, the polygon mirror 44 and the scanning lens 42, and having the bottom part 28 fixed to the rotatable support 26, around the shaft of which the scanner unit is rotated) (col. 2, lines 7-26),
- the rotation shaft is provided on an axis (25) passing through the middle of the linear exposure light spot along the main scanning direction (the imaginary axis 25 passing through the middle of the scan line, which is perpendicular to the motion direction of the film 10).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Compton et al. in view of Yamakawa (U.S. 6,243,128).

Compton et al. discloses all the basic limitations of the claimed invention except for the developing unit, the transfer unit and the fixing unit.

Yamakawa discloses an image forming apparatus comprising an optical box (or housing 16) holding a laser unit (14), a polygon mirror (1) and the scanning lenses (2 and 3), the housing being rotatable around the pin (11a) provided on the housing so as to correct the tilt of the scan line with respect to the longitudinal axis of the photosensitive drum (21). Yamakawa further discloses a developing device (128), a transfer device (130) and a fixing device (138), which are pertinent to any electrophotographic printing device.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the developing device, the transfer device and the fixing device in the optical scanning device of Compton et al. since Yamakawa teaches this to be well known in the art for forming a visible toner image in any electrophotographic printing device.

#### ***Pertinent Prior Art***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Makino (U.S. 5,151,811) discloses an image forming apparatus comprising an optical box being rotatable around a pin C formed on the optical box so as to correct a tilt of the scan line relative to the image carrier (Figs. 1 and 2).

Murayama et al. (U.S. 4,903,067) discloses an image forming apparatus including a plurality of optical boxes, each of which is rotatable around an axis provided on a lateral side of the optical box for correcting an angular displacement of the scan line with respect to the image carrier.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Hai Chi Pham*

**HAI PHAM**  
**PRIMARY EXAMINER**

July 7, 2005